

SEQUENCE LISTING

<110> Bateman, John Francis
Fitzgerald, David

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<141> 2003-10-31

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<150> 2002-05-02

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<151> 2001-05-02

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Glu
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Thr
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His Thr Gly Leu Ala Leu Val Tyr Ala Lys Glu Gln Leu Phe Ala
Glu
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Ala Ser Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp Val
Thr
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Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu Leu
Lys
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Phe
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Tyr

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Asn														
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Ala
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His
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Phe															
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Thr															
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Gly
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Thr
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Glu Ala Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp Val
Thr
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Lys

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cttggcatag 3780

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caccgcatcc 3840

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cggactgccc 3900

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caccagctgc 3960

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gctgtccagc 4020

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ggaggaatgc 4080

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cccagggccc 4140

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ggaaagagga 4200

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ccagcccacc 4620

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tgcccaccac 5640

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cccatatacc 6000

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gactggaggg 6060

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<210> 20
<211> 418
<212> PRT
<213> human

<400> 20
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Ala 5 10 15

Leu Ala Arg Ser Gly Ala Glu Arg Gly Pro Pro Ala Ser Ala Pro
Arg 20 25 30

Gly Asp Leu Met Phe Leu Leu Asp Ser Ser Ala Ser Val Ser His
Tyr 35 40 45

Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val Ala Pro
Leu 50 55 60

Pro Leu Gly Thr Gly Ala Leu Arg Ala Ser Leu Val His Val Gly
Ser 65 70 75
80

Arg Pro Tyr Thr Glu Phe Pro Phe Gly Gln His Ser Ser Gly Glu
Ala 85 90 95

Ala Gln Asp Ala Val Arg Ala Ser Ala Gln Arg Met Gly Asp Thr

His															
				100				105					110		
Thr	Gly	Leu	Ala	Leu	Val	Tyr	Ala	Lys	Glu	Gln	Leu	Phe	Ala	Glu	
Ala															
		115					120					125			
Ser	Gly	Ala	Arg	Pro	Gly	Val	Pro	Lys	Val	Leu	Val	Trp	Val	Thr	
Asp															
	130					135					140				
Gly	Gly	Ser	Ser	Asp	Pro	Val	Gly	Pro	Pro	Met	Gln	Glu	Leu	Lys	
Asp															
145					150					155					
160															
Leu	Gly	Val	Thr	Val	Phe	Ile	Val	Ser	Thr	Gly	Arg	Gly	Asn	Phe	
Leu															
				165					170				175		
Glu	Leu	Ser	Ala	Ala	Ala	Ser	Ala	Pro	Ala	Glu	Lys	His	Leu	His	
Phe															
		180					185					190			
Val	Asp	Val	Asp	Asp	Leu	His	Ile	Ile	Val	Gln	Glu	Leu	Arg	Gly	
Ser															
		195					200					205			
Ile	Leu	Asp	Ala	Met	Arg	Pro	Gln	Gln	Leu	His	Ala	Thr	Glu	Ile	
Thr															
	210					215					220				
Ser	Ser	Gly	Phe	Arg	Leu	Ala	Trp	Pro	Pro	Leu	Leu	Thr	Ala	Asp	
Ser															
225					230					235					
240															
Gly	Tyr	Tyr	Val	Leu	Glu	Leu	Val	Pro	Ser	Ala	Gln	Pro	Gly	Ala	
Ala															
				245				250					255		
Arg	Arg	Gln	Gln	Leu	Pro	Gly	Asn	Ala	Thr	Asp	Trp	Ile	Trp	Ala	
Gly															
		260					265					270			
Leu	Asp	Pro	Asp	Thr	Asp	Tyr	Asp	Val	Ala	Leu	Val	Pro	Glu	Ser	
Asn															
	275					280					285				
Val	Arg	Leu	Leu	Arg	Pro	Gln	Ile	Leu	Arg	Val	Arg	Thr	Arg	Pro	

Glu
 290 295 300
 Glu Ala Gly Pro Glu Arg Ile Val Ile Ser His Ala Arg Pro Arg
 Ser
 305 310 315
 320
 Leu Arg Val Ser Trp Ala Pro Ala Leu Gly Ser Ala Ala Ala Leu
 Gly
 325 330 335
 Tyr His Val Gln Phe Gly Pro Leu Arg Gly Gly Glu Ala Gln Arg
 Val
 340 345 350
 Glu Val Pro Ala Gly Arg Asn Cys Thr Thr Leu Gln Gly Leu Ala
 Pro
 355 360 365
 Gly Thr Ala Tyr Leu Val Thr Val Thr Ala Ala Phe Arg Ser Gly
 Arg
 370 375 380
 Glu Ser Ala Leu Ser Ala Lys Ala Cys Thr Pro Asp Gly Pro Arg
 Pro
 385 390 395
 400
 Arg Pro Arg Pro Val Pro Arg Ala Pro Thr Pro Gly Thr Ala Ser
 Arg
 405 410 415
 Glu Pro

<210> 21
 <211> 415
 <212> PRT
 <213> mouse

<400> 21
 Met Leu Phe Trp Thr Ala Phe Ser Met Ala Leu Ser Leu Arg Leu
 Ala
 1 5 10 15
 Leu Ala Arg Ser Ser Ile Glu Arg Gly Ser Thr Ala Ser Asp Pro
 Gln
 20 25 30

Gly Tyr	Asp	Leu	Leu	Phe	Leu	Leu	Asp	Ser	Ser	Ala	Ser	Val	Ser	His
		35					40					45		
Glu Met	Phe	Ser	Arg	Val	Arg	Glu	Phe	Val	Gly	Gln	Leu	Val	Ala	Thr
	50					55					60			
Ser Ser	Phe	Gly	Pro	Gly	Ala	Leu	Arg	Ala	Ser	Leu	Val	His	Val	Gly
65					70					75				
80														
Gln Ala	Pro	His	Thr	Glu	Phe	Thr	Phe	Asp	Gln	Tyr	Ser	Ser	Gly	Gln
				85					90				95	
Ile Asn	Arg	Asp	Ala	Ile	Arg	Val	Ala	Pro	Gln	Arg	Met	Gly	Asp	Thr
			100					105				110		
Thr Glu	Gly	Leu	Ala	Leu	Ala	Tyr	Ala	Lys	Glu	Gln	Leu	Phe	Ala	Glu
		115					120					125		
Ala Asp	Gly	Ala	Arg	Pro	Gly	Val	Pro	Lys	Val	Leu	Val	Trp	Val	Thr
	130					135						140		
Gly Asp	Gly	Ser	Ser	Asp	Pro	Val	Gly	Pro	Pro	Met	Gln	Glu	Leu	Lys
145						150				155				
160														
Leu Leu	Gly	Val	Thr	Ile	Phe	Ile	Val	Ser	Thr	Gly	Arg	Gly	Asn	Leu
				165					170				175	
Glu Phe	Leu	Leu	Ala	Ala	Ala	Ser	Ala	Pro	Ala	Glu	Lys	His	Leu	His
			180					185					190	
Val Ser	Asp	Val	Asp	Asp	Leu	Pro	Ile	Ile	Ala	Arg	Glu	Leu	Arg	Gly
	195						200					205		
Ile Leu	Thr	Asp	Ala	Met	Gln	Pro	Gln	Gln	Leu	His	Ala	Ser	Glu	Val
	210					215					220			

Ser	Ser	Gly	Phe	Arg	Leu	Ser	Trp	Pro	Pro	Leu	Leu	Thr	Ala	Asp
Ser														
225					230					235				
240														
Gly	Tyr	Tyr	Val	Leu	Glu	Leu	Val	Pro	Ser	Gly	Lys	Leu	Ala	Thr
Thr														
				245					250					255
Arg	Arg	Gln	Gln	Leu	Pro	Gly	Asn	Ala	Thr	Ser	Trp	Thr	Trp	Thr
Asp														
			260					265					270	
Leu	Asp	Pro	Asp	Thr	Asp	Tyr	Glu	Val	Ser	Leu	Leu	Pro	Glu	Ser
Asn														
		275					280					285		
Val	His	Leu	Leu	Arg	Pro	Gln	His	Val	Arg	Val	Arg	Thr	Leu	Gln
Glu														
	290					295					300			
Glu	Ala	Gly	Pro	Glu	Arg	Ile	Val	Ile	Ser	His	Ala	Arg	Pro	Arg
Ser														
305					310					315				
320														
Leu	Arg	Val	Ser	Trp	Ala	Pro	Ala	Leu	Gly	Pro	Asp	Ser	Ala	Leu
Gly														
				325					330					335
Tyr	His	Val	Gln	Leu	Gly	Pro	Leu	Gln	Gly	Gly	Ser	Leu	Glu	Arg
Val														
			340					345					350	
Glu	Val	Pro	Ala	Gly	Gln	Asn	Ser	Thr	Thr	Val	Gln	Gly	Leu	Thr
Pro														
		355					360					365		
Cys	Thr	Thr	Tyr	Leu	Val	Thr	Val	Thr	Ala	Ala	Phe	Arg	Ser	Gly
Arg														
	370					375					380			
Gln	Arg	Ala	Leu	Ser	Ala	Lys	Ala	Cys	Thr	Ala	Ser	Gly	Ala	Arg
Thr														
385					390					395				
400														
Arg	Ala	Pro	Gln	Ser	Met	Arg	Pro	Glu	Ala	Gly	Pro	Arg	Glu	Pro
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<210> 22
<211> 182
<212> PRT
<213> artificial sequence

<400> 22
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Arg
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Phe Asn Phe Arg Leu Val Arg Leu Phe Leu Glu Asn Leu Val Ser
Ala
20 25 30
Phe Asn Val Gly Ser Glu Lys Thr Arg Val Gly Leu Ala Gln Tyr
Ser
35 40 45
Gly Asp Pro Arg Ile Glu Trp His Leu Asn Ala Tyr Gly Thr Lys
Asp
50 55 60
Ala Val Leu Asp Ala Val Arg Asn Leu Pro Tyr Lys Gly Gly Asn
Thr
65 70 75
80
Leu Thr Gly Leu Ala Leu Thr Tyr Ile Leu Glu Asn Ser Phe Lys
Pro
85 90 95
Glu Ala Gly Ala Arg Pro Gly Val Ser Lys Ile Gly Ile Leu Ile
Thr
100 105 110
Asp Gly Lys Ser Gln Asp Asp Val Ile Pro Pro Ala Lys Asn Leu
Arg
115 120 125
Asp Ala Gly Ile Glu Leu Phe Ala Ile Gly Val Lys Asn Ala Asp
Ile
130 135 140
Asn Glu Leu Lys Glu Ile Ala Ser Glu Pro Asp Ser Thr His Val
Tyr
145 150 155
160
Asn Val Ala Asp Phe Asn Phe Met Asn Ser Ile Val Glu Gly Leu
Thr

	165	170	175
Arg Thr Val Cys Ser Arg			
180			
<210> 23			
<211> 183			
<212> PRT			
<213> artificial sequence			
<400> 23			
Ala Ala Asp Ile Val Phe Leu Leu Asp Gly Ser Ser Ser Ile Gly			
Arg			
1	5	10	15
Ser Asn Phe Arg Glu Val Arg Ser Phe Leu Glu Gly Leu Val Leu			
Pro			
	20	25	30
Phe Ser Gly Ala Ala Ser Ala Gln Gly Val Arg Phe Ala Thr Val			
Gln			
	35	40	45
Tyr Ser Asp Asp Pro Arg Thr Glu Phe Gly Leu Asp Ala Leu Gly			
Ser			
	50	55	60
Gly Gly Asp Val Ile Arg Ala Ile Arg Glu Leu Ser Tyr Lys Gly			
Gly			
65	70	75	
80			
Asn Thr Arg Thr Gly Ala Ala Ile Leu His Val Ala Asp His Val			
Phe			
	85	90	95
Leu Pro Gln Leu Ala Arg Pro Gly Val Pro Lys Val Cys Ile Leu			
Ile			
	100	105	110
Thr Asp Gly Lys Ser Gln Asp Leu Val Asp Thr Ala Ala Gln Arg			
Leu			
	115	120	125
Lys Gly Gln Gly Val Lys Leu Phe Ala Val Gly Ile Lys Asn Ala			
Asp			
	130	135	140
Pro Glu Glu Leu Lys Arg Val Ala Ser Gln Pro Thr Ser Asp Phe			
Phe			

145 150 155
 160
 Phe Phe Val Asn Asp Phe Ser Ile Leu Arg Thr Leu Leu Pro Leu
 Val
 165 170 175
 Ser Arg Arg Val Cys Thr Thr
 180
 <210> 24
 <211> 182
 <212> PRT
 <213> artificial sequence
 <400> 24
 Lys Ala Asp Ile Val Phe Leu Thr Asp Ala Ser Trp Ser Ile Gly
 Asp
 1 5 10 15
 Asp Asn Phe Asn Lys Val Val Lys Phe Ile Phe Asn Thr Val Gly
 Ala
 20 25 30
 Phe Asp Glu Val Asn Pro Ala Gly Ile Gln Val Ser Phe Val Gln
 Tyr
 35 40 45
 Ser Asp Glu Val Lys Ser Glu Phe Lys Leu Asn Thr Tyr Asn Asp
 Lys
 50 55 60
 Ala Leu Ala Leu Gly Ala Leu Gln Asn Ile Arg Tyr Arg Gly Gly
 Asn
 65 70 75
 80
 Thr Arg Thr Gly Lys Ala Leu Thr Phe Ile Lys Glu Lys Val Leu
 Thr
 85 90 95
 Trp Glu Ser Gly Met Arg Lys Asn Val Arg Val Leu Gly Val Val
 Thr
 100 105 110
 Asp Gly Arg Ser Gln Asp Glu Val Lys Lys Ala Ala Phe Val Ile
 Gln
 115 120 125
 Gln Ser Gly Phe Ser Val Phe Val Val Gly Val Ala Asp Val Asp

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Tyr      130                      135                      140
Asn Glu Leu Ala Asn Ile Ala Ser Lys Pro Ser Glu Arg His Val
Phe
145                      150                      155
160

Ile Val Asp Asp Phe Glu Ser Phe Glu Lys Ile Glu Asp Asn Leu
Ile
                      165                      170                      175

Thr Phe Val Cys Glu Thr
                      180

<210> 25
<211> 185
<212> PRT
<213> artificial sequence

<400> 25
Ala Ala Asp Ile Val Phe Leu Val Asp Ser Ser Trp Ser Ala Gly
Lys
1                      5                      10                      15

Asp Arg Phe Leu Leu Val Gln Glu Phe Leu Ser Asp Val Val Glu
Ser
                      20                      25                      30

Leu Ala Val Gly Asp Asn Asp Phe His Phe Ala Leu Val Arg Leu
Asn
                      35                      40                      45

Gly Asn Pro His Thr Glu Phe Leu Leu Asn Thr Tyr His Ser Lys
Gln
50                      55                      60

Glu Val Leu Ser His Ile Ala Asn Met Ser Tyr Ile Gly Gly Ser
Asn
65                      70                      75
80

Gln Thr Gly Lys Gly Leu Glu Tyr Val Ile His Ser His Leu Thr
Glu
                      85                      90                      95

Ala Ser Gly Ser Arg Ala Ala Asp Gly Val Pro Gln Val Ile Val
Val
                      100                      105                      110

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Ala	Glu	Gly	Ala	Arg	Pro	Leu	Arg	Glu	Asn	Val	Pro	Arg	Ile	Ile
Met														
			100					105					110	

Ile	Val	Thr	Asp	Gly	Arg	Pro	Gln	Asp	Ser	Val	Ala	Glu	Val	Ala
Ala														
		115					120					125		

Lys	Ala	Arg	Asn	Thr	Gly	Ile	Leu	Ile	Phe	Ala	Ile	Gly	Val	Gly
Gln														
	130						135					140		

Val	Asp	Leu	Asn	Thr	Leu	Lys	Ala	Ile	Gly	Ser	Glu	Pro	His	Lys
Asp														
145					150					155				
160														

His	Val	Phe	Leu	Val	Ala	Asn	Phe	Ser	Gln	Ile	Glu	Ser	Leu	Thr
Ser														
			165						170				175	

Val	Phe	Gln	Asn	Lys	Leu	Cys	Thr	Val
		180						185

<210> 27
 <211> 184
 <212> PRT
 <213> artificial sequence

<400>	27													
Pro	Leu	Asp	Leu	Val	Phe	Met	Ile	Asp	Ser	Ser	Arg	Ser	Val	Arg
Pro														
1				5					10				15	

Phe	Glu	Phe	Glu	Thr	Met	Arg	Gln	Phe	Leu	Val	Gly	Leu	Leu	Arg
Ser														
			20					25				30		

Leu	Asp	Val	Gly	Leu	Asn	Ala	Thr	Arg	Val	Gly	Val	Ile	Gln	Tyr
Ser														
		35					40					45		

Ser	Gln	Val	Gln	Ser	Val	Phe	Pro	Leu	Gly	Ala	Phe	Ser	Arg	Arg
Glu														
	50					55					60			

Asp	Met	Glu	Arg	Ala	Ile	Arg	Ala	Val	Val	Pro	Leu	Ala	Gln	Gly
Thr														
65					70					75				

80

Met Thr Gly Leu Ala Ile Gln Tyr Ala Met Asn Val Ala Phe Ser
Glu

85

90

95

Ala Glu Gly Ala Arg Pro Ser Glu Glu Arg Val Pro Arg Val Leu
Val

100

105

110

Ile Val Thr Asp Gly Arg Pro Gln Asp Arg Val Ala Glu Val Ala
Ala

115

120

125

Gln Ala Arg Ala Arg Gly Ile Glu Ile Tyr Ala Val Gly Val Gln
Arg

130

135

140

Ala Asp Val Gly Ser Leu Arg Thr Met Ala Ser Pro Pro Leu Asp
Gln

145

150

155

160

His Val Phe Leu Val Glu Ser Phe Asp Ile Gln Glu Phe Gly Leu
Gln

165

170

175

Phe Gln Gly Arg Leu Cys Gly Lys

180

<210> 28

<211> 185

<212> PRT

<213> artificial sequence

<400> 28

Pro Leu Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Arg
Pro

1

5

10

15

Leu Glu Phe Thr Lys Val Lys Thr Phe Val Ser Arg Ile Ile Asp
Thr

20

25

30

Leu Asp Ile Gly Ala Thr Asp Thr Arg Val Ala Val Val Asn Tyr
Ala

35

40

45

Ser Thr Val Lys Ile Glu Phe Gln Leu Asn Thr Tyr Ser Asp Lys
Gln

50		55		60										
Ala	Leu	Lys	Gln	Ala	Val	Ala	Arg	Ile	Thr	Pro	Leu	Ser	Thr	Gly
Thr														
65					70					75				
80														
Met	Ser	Gly	Leu	Ala	Ile	Gln	Thr	Ala	Met	Glu	Glu	Ala	Phe	Thr
Val														
				85					90				95	
Glu	Ala	Gly	Ala	Arg	Gly	Pro	Met	Ser	Asn	Ile	Pro	Lys	Val	Ala
Ile														
			100					105					110	
Ile	Val	Thr	Asp	Gly	Arg	Pro	Gln	Asp	Gln	Val	Asn	Glu	Val	Ala
Ala														
		115					120				125			
Arg	Ala	Arg	Ala	Ser	Gly	Ile	Glu	Leu	Tyr	Ala	Val	Gly	Val	Asp
Arg														
	130					135				140				
Ala	Asp	Met	Glu	Ser	Leu	Lys	Met	Met	Ala	Ser	Lys	Pro	Leu	Glu
Glu														
145					150					155				
160														
His	Val	Phe	Tyr	Val	Glu	Thr	Tyr	Gly	Val	Ile	Glu	Lys	Leu	Ser
Ala														
			165						170				175	
Arg	Phe	Gln	Glu	Thr	Pro	Cys	Ala	Leu						
			180					185						
<210>	29													
<211>	185													
<212>	PRT													
<213>	artificial sequence													
<400>	29													
Pro	Thr	Asp	Leu	Val	Phe	Val	Val	Asp	Ser	Ser	Arg	Ser	Val	Arg
Pro														
1			5					10					15	
Val	Glu	Phe	Glu	Lys	Val	Lys	Val	Phe	Leu	Ser	Gln	Val	Ile	Glu
Ser														
			20					25					30	
Leu	Asp	Val	Gly	Pro	Asn	Ala	Thr	Arg	Val	Gly	Leu	Val	Asn	Tyr

Ala															
	35						40						45		
Ser Thr Val Lys Pro Glu Phe Pro Leu Arg Ala His Gly Ser Lys															
Ala	50						55						60		
Ser Leu Leu Gln Ala Val Arg Arg Ile Gln Pro Leu Ser Thr Gly															
Thr															
65						70						75			
80															
Met Thr Gly Leu Ala Leu Gln Phe Ala Ile Thr Lys Ala Leu Ser															
Asp															
					85					90				95	
Ala Glu Gly Gly Arg Ala Arg Ser Pro Asp Ile Ser Lys Val Val															
Ile															
				100					105					110	
Val Val Thr Asp Gly Arg Pro Gln Asp Ser Val Arg Asp Val Ser															
Glu															
				115					120					125	
Arg Ala Arg Ala Ser Gly Ile Glu Leu Phe Ala Ile Gly Leu Gly															
Arg															
				130					135					140	
Val Asp Lys Ala Thr Leu Arg Gln Ile Ala Ser Glu Pro Gln Asp															
Glu															
145							150						155		
160															
His Val Asp Tyr Val Glu Ser Tyr Asn Val Ile Glu Lys Leu Ala															
Lys															
						165				170				175	
Lys Phe Gln Glu Ala Phe Cys Val Val															
				180						185					
<210>	30														
<211>	193														
<212>	PRT														
<213>	artificial sequence														
<400>	30														
Gln Leu Asp Ile Val Ile Val Leu Asp Gly Ser Asn Ser Ile Tyr															
Pro															
1						5							10		15

Trp	Asp	Ser	Val	Thr	Ala	Phe	Leu	Asn	Asp	Leu	Leu	Lys	Arg	Met
Asp			20					25					30	
Ile	Gly	Pro	Lys	Gln	Thr	Gln	Val	Gly	Ile	Val	Gln	Tyr	Gly	Glu
Asn		35					40					45		
Val	Thr	His	Glu	Phe	Asn	Leu	Asn	Lys	Tyr	Ser	Ser	Thr	Glu	Glu
Val		50					55					60		
Leu	Val	Ala	Ala	Lys	Lys	Ile	Val	Gln	Arg	Gly	Gly	Arg	Gln	Thr
Met														
65						70					75			
80														
Thr	Ala	Leu	Gly	Thr	Asp	Thr	Ala	Arg	Lys	Glu	Ala	Phe	Thr	Glu
Ala														
				85					90				95	
Arg	Gly	Ala	Arg	Arg	Gly	Val	Lys	Lys	Val	Met	Val	Ile	Val	Thr
Asp														
			100					105					110	
Gly	Glu	Ser	His	Asp	Asn	His	Arg	Leu	Lys	Lys	Val	Ile	Gln	Asp
Cys														
		115						120				125		
Glu	Asp	Glu	Asn	Ile	Gln	Arg	Phe	Ser	Ile	Ala	Ile	Leu	Gly	Ser
Tyr														
	130						135					140		
Asn	Arg	Gly	Asn	Leu	Ser	Thr	Glu	Lys	Phe	Val	Glu	Glu	Ile	Lys
Ser														
145						150					155			
160														
Ile	Ala	Ser	Glu	Pro	Thr	Glu	Lys	His	Phe	Phe	Asn	Val	Ser	Asp
Glu														
				165					170				175	
Leu	Ala	Leu	Val	Thr	Ile	Val	Lys	Thr	Leu	Gly	Glu	Arg	Ile	Phe
Ala														
			180					185					190	
Leu														

<211> 181
<212> PRT
<213> artificial sequence

<400> 31

Gln Gly Asp Leu Leu Phe Leu Leu Asp Ser Ser Ala Ser Val Ser
His
1 5 10 15

Tyr Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val Ala
Thr
20 25 30

Met Ser Phe Gly Pro Gly Ala Leu Arg Ala Ser Leu Val His Val
Gly
35 40 45

Ser Gln Pro His Thr Glu Phe Thr Phe Asp Gln Tyr Ser Ser Gly
Gln
50 55 60

Ala Ile Arg Asp Ala Ile Arg Val Ala Pro Gln Arg Met Gly Asp
Thr
65 70 75
80

Asn Thr Gly Leu Ala Leu Ala Tyr Ala Lys Glu Gln Leu Phe Ala
Glu
85 90 95

Glu Ala Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp Val
Thr
100 105 110

Asp Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu Leu
Lys
115 120 125

Asp Leu Gly Val Thr Ile Phe Ile Val Ser Thr Gly Arg Gly Asn
Leu
130 135 140

Leu Glu Leu Leu Ala Ala Ala Ser Ala Pro Ala Glu Lys His Leu
His
145 150 155
160

Phe Val Asp Val Asp Asp Leu Pro Ile Ile Ala Arg Glu Leu Arg
Gly
165 170 175

Ser Ile Thr Asp Ala
180

<210> 32
<211> 184
<212> PRT
<213> artificial sequence

<400> 32
Lys Ala Asp Ile Ala Phe Leu Ile Asp Gly Ser Tyr Asn Ile Gly
Gln
1 5 10 15

Arg Arg Phe Asn Leu Gln Lys Asn Phe Val Gly Lys Val Ala Val
Met
20 25 30

Leu Gly Ile Gly Thr Glu Gly Pro His Val Gly Val Val Gln Ala
Ser
35 40 45

Glu His Pro Lys Ile Glu Phe Tyr Leu Lys Asn Phe Thr Ala Ala
Lys
50 55 60

Glu Val Leu Phe Ala Ile Lys Glu Leu Gly Phe Arg Gly Gly Asn
Ser
65 70 75
80

Asn Thr Gly Lys Ala Leu Lys His Ala Ala Gln Lys Phe Phe Ser
Met
85 90 95

Glu Asn Gly Ala Arg Lys Gly Ile Pro Lys Ile Ile Val Val Phe
Leu
100 105 110

Asp Gly Trp Pro Ser Asp Asp Leu Glu Glu Ala Gly Ile Val Ala
Arg
115 120 125

Glu Phe Gly Val Asn Val Phe Ile Val Ser Ser Val Ala Lys Pro
Thr
130 135 140

Thr Glu Glu Leu Gly Met Val Gln Asp Ile Gly Phe Ile Asp Lys
Ala
145 150 155

160

Val Cys Arg Asn Asn Gly Phe Phe Ser Tyr Gln Met Pro Ser Trp
Phe

165

170

175

Gly Thr Thr Lys Tyr Val Lys Pro
180

<210> 33

<211> 186

<212> PRT

<213> artificial sequence

<400> 33

Leu Leu Asp Leu Val Phe Leu Leu Asp Gly Ser Ser Arg Leu Ser
Glu

1

5

10

15

Ala Glu Phe Glu Val Leu Lys Ala Phe Val Val Asp Met Met Glu
Arg

20

25

30

Leu Arg Ile Ser Gln Lys Trp Val Arg Val Ala Val Val Glu Tyr
His

35

40

45

Asp Gly Ser His Ala Tyr Ile Gly Leu Lys Asp Arg Lys Arg Pro
Ser

50

55

60

Glu Leu Arg Arg Ile Ala Ser Gln Val Lys Tyr Ala Gly Ser Gln
Val

65

70

75

80

Ala Ser Thr Ser Glu Val Leu Lys Tyr Thr Leu Phe Gln Ile Phe
Ser

85

90

95

Lys Ile Asp Arg Pro Glu Ala Ser Arg Ile Ala Leu Leu Leu Met
Ala

100

105

110

Ser Gln Glu Pro Gln Arg Met Ser Arg Asn Phe Val Arg Tyr Val
Gln

115

120

125

Gly Leu Lys Lys Lys Lys Val Ile Val Ile Pro Val Gly Ile Gly
Pro

130		135		140										
His	Ala	Asn	Leu	Lys	Gln	Ile	Arg	Leu	Ile	Glu	Lys	Gln	Ala	Pro
Glu														
145					150					155				
160														
Asn	Lys	Ala	Phe	Val	Leu	Ser	Ser	Val	Asp	Glu	Leu	Glu	Gln	Gln
Arg														
				165					170				175	
Asp	Glu	Ile	Val	Ser	Tyr	Leu	Cys	Asp	Leu					
			180					185						

<210> 34
 <211> 85
 <212> PRT
 <213> artificial sequence

<400>	34													
Pro	Arg	Asn	Leu	Lys	Val	Thr	Asp	Glu	Thr	Thr	Asp	Ser	Phe	Lys
Ile														
1				5					10				15	
Thr	Trp	Thr	Gln	Ala	Pro	Gly	Arg	Val	Leu	Arg	Tyr	Arg	Ile	Ile
Tyr														
			20					25				30		
Arg	Pro	Val	Ala	Gly	Gly	Glu	Ser	Arg	Glu	Val	Thr	Thr	Pro	Pro
Asn														
		35					40				45			
Gln	Arg	Arg	Arg	Thr	Leu	Glu	Asn	Leu	Ile	Pro	Asp	Thr	Lys	Tyr
Glu														
	50					55				60				
Val	Ser	Val	Ile	Pro	Glu	Tyr	Phe	Ser	Gly	Pro	Gly	Thr	Pro	Leu
Thr														
65				70						75				
80														
Gly	Asn	Ala	Ala	Thr										
				85										

<210> 35
 <211> 86
 <212> PRT
 <213> artificial sequence

<400> 35

Pro Ser Gln Met Gln Val Thr Asp Val Gln Asp Asn Ser Ile Ser
Val
1 5 10 15

Arg Trp Leu Pro Ser Thr Ser Pro Val Thr Gly Tyr Arg Val Thr
Thr
20 25 30

Thr Pro Lys Asn Gly Leu Gly Pro Ser Lys Thr Lys Thr Ala Ser
Pro
35 40 45

Asp Gln Thr Glu Met Thr Ile Glu Gly Leu Gln Pro Thr Val Glu
Tyr
50 55 60

Val Val Ser Val Tyr Ala Gln Asn Arg Asn Gly Glu Ser Gln Pro
Leu
65 70 75
80

Val Gln Thr Ala Val Thr
85

<210> 36
<211> 87
<212> PRT
<213> artificial sequence

<400> 36
Pro Glu Arg Ile Val Ile Ser His Ala Arg Pro Arg Ser Leu Arg
Val
1 5 10 15

Ser Trp Ala Pro Ala Leu Gly Pro Asp Ser Ala Leu Gly Tyr His
Val
20 25 30

Gln Leu Gly Pro Leu Gln Gly Gly Ser Leu Glu Arg Val Glu Val
Pro
35 40 45

Ala Gly Gln Asn Ser Thr Thr Val Gln Gly Leu Thr Pro Cys Thr
Thr
50 55 60

Tyr Leu Val Thr Val Thr Ala Ala Phe Arg Ser Gly Arg Gln Arg
Ala
65 70 75
80

Leu Ser Ala Lys Ala Cys Thr
85

<210> 37
<211> 88
<212> PRT
<213> artificial sequence

<400> 37
Pro Thr Arg Leu Val Phe Ser Ala Leu Gly Pro Thr Ser Leu Arg
Val
1 5 10 15
Ser Trp Gln Glu Pro Arg Cys Glu Arg Pro Leu Gln Gly Tyr Ser
Val
20 25 30
Glu Tyr Gln Leu Leu Asn Gly Gly Glu Leu His Arg Leu Asn Ile
Pro
35 40 45
Asn Pro Ala Gln Thr Ser Val Val Val Glu Asp Leu Leu Pro Asn
His
50 55 60
Ser Tyr Val Phe Arg Val Arg Ala Gln Ser Gln Glu Gly Trp Gly
Arg
65 70 75
80
Glu Arg Glu Gly Val Ile Thr Ile
85

<210> 38
<211> 85
<212> PRT
<213> artificial sequence

<400> 38
Pro Gln His Leu Glu Val Asp Glu Ala Ser Thr Asp Ser Phe Arg
Val
1 5 10 15
Ser Trp Lys Pro Thr Ser Ser Asp Ile Ala Phe Tyr Arg Leu Ala
Trp
20 25 30
Ile Pro Leu Asp Gly Gly Glu Ser Glu Glu Val Val Leu Ser Gly
Asp

	35		40		45									
Ala	Asp	Ser	Tyr	Val	Ile	Glu	Gly	Leu	Leu	Pro	Asn	Thr	Glu	Tyr
Glu														
	50					55					60			
Val	Ser	Leu	Leu	Ala	Val	Phe	Asp	Asp	Glu	Thr	Glu	Ser	Glu	Val
Val														
65					70					75				
80														
Ala	Val	Leu	Gly	Ala										
				85										

<210> 39
 <211> 85
 <212> PRT
 <213> artificial sequence

<400>	39													
Pro	Lys	Asp	Ile	Thr	Ile	Ser	Asn	Val	Thr	Lys	Asp	Ser	Val	Met
Val														
1			5						10				15	
Ser	Trp	Ser	Pro	Pro	Val	Ala	Ser	Phe	Asp	Tyr	Tyr	Arg	Val	Ser
Tyr														
			20						25				30	
Arg	Pro	Thr	Gln	Val	Gly	Arg	Leu	Asp	Ser	Ser	Val	Val	Pro	Asn
Thr														
			35						40				45	
Val	Thr	Glu	Phe	Thr	Ile	Thr	Arg	Leu	Asn	Pro	Ala	Thr	Glu	Tyr
Glu														
	50					55					60			
Ile	Ser	Leu	Asn	Ser	Val	Arg	Gly	Arg	Glu	Glu	Ser	Glu	Arg	Ile
Cys														
65					70					75				
80														
Thr	Leu	Val	His	Thr										
				85										

<210> 40
 <211> 87
 <212> PRT
 <213> artificial sequence

<400> 40

[illegible]